**MATH**

**PAGEMAKER10**

**Inverse Trignometry**

Q1. Sin(Cot–1x)

(a)

(b) x

(c) (1+x2

(d) (1+x2

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q2. Cos

(a)

(b)

(c)

(d) none

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q3. Co is

(a)

(b)

(c)

(d)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q4. 1+Cot2(Sin–1x)

(a)

(b) x2

(c)

(d)

L1Difficulty1

Qtag Mathematics

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Q5. tan–1 is

(a) Sin–1

(b) a Sin–1

(c) Sin–1

(d) Sin–1

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q6. Sec–1 Sec(–30) is

(a) –60

(b) –30

(c) 30

(d) 150

L1Difficulty1

Qtag Mathematics

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Q7. Sec2(ta

(a) 5

(b) 13

(c) 15

(d) 6

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q8. Cos–1 is

(a)

(b)

(c)

(d) none

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q9. The domain of Sin–1x is

(a) (–

(b) (–1, 1)

(c) (

(d) (, 1)

L1Difficulty1

Qtag Mathematics

Qcreator Pagemaker10

Q10. The value of sin–1 Sin10 is

(a) 10

(b)

(c)

(d) none

L1Difficulty1

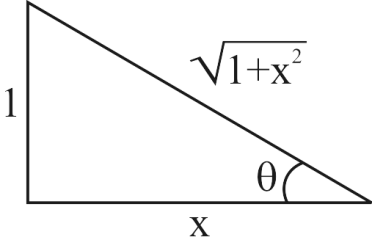
Qtag Mathematics

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**Solutions**

S1. Ans. (d)

Sol.



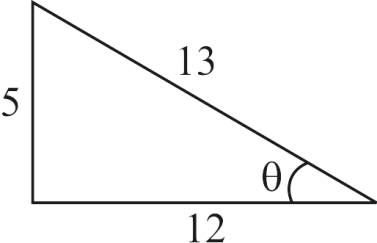
Sol. Sin (Cot–1x)

Let Cot–1x =

Cot =

S2. Ans. (a)

Sol.

****

Sol. Sin–1 =

Sin =

Cos

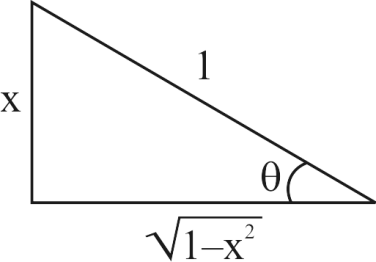
S3. Ans. (b)

Sol.

Sol.

S4. Ans. (c)

Sol.

****

Sol. 1 + (cot sin–1 x)2

Let Sin–1 x =

Sin =

1 +

S5. Ans. (c)

Sol.

Sol. Let x = a Sin

tan–1

S6. Ans. (b)

S7. Ans. (c)

Sol.

|  |  |  |  |
| --- | --- | --- | --- |
| tan = 2 | 4.png | 5.png | cot = 3 |

sec2 (sec–1) + cosec2 (cosec–1

5 + 10

15

S8. Ans. (b)

Sol.

cos–1 cos

Cos–1

S9. Ans. (b)

S10. Ans. (c)

Sol.

+3

**Level-II**

Q1. tan–1 is

(a)

(b) ta

(c)

(d) none

L3Difficulty3

Qtag Mathematics

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Q2. is

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q3. If tan–1 = tan–1x, then x is

(a) 1

(b)

(c)

(d) none

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q4. sin cot–1 tan cos–1x is

(a) x

(b)

(c) 1

(d) none

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q5. sin–1 is

(a) cos–1

(b) cosec–1

(c) ta

(d) none of these

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q6. If a > b > 0, then the value of tan–1 depends on

(a) both a and b

(b) b not a

(c) a and not b

(d) neither a nor b

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q7. If x takes non-positive premixes value, then sin–1x is

(a) cos–1

(b) –cos–1

(c) cos–1

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q8. cos is

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q9. If sin–1x + sin–1y + sin–1z = then the value of x2 + y2 + z2 + 2xyz is equal to

(a) 0

(b) 1

(c) 2

(d) 3

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

Q10. If = sin–1 sin(–600°) then one of the positive value of is

(a)

(b)

(c)

(d)

L3Difficulty3

Qtag Mathematics

Qcreator Pagemaker10

**Solutions**

S1. Ans. (b)

Sol.

x = tan

tan–1

tan–1

tan–1

tan–1x

S2. Ans. (a)

Sol.

tan–1

tan–1

S3. Ans. (c)

Sol.

x = tan

tan–1 =

x = tan =

S4. Ans. (a)

Sol.

cos–1 x = cos sec =

tan =

Now sin cot–1 tan = sin cot–1

putting x = sin

sin cot–1  = sin

S5. Ans. (c)

Sol.

x = a tan2

sin–1

= tan

S6. Ans. (d)

Sol.

tan–1

tan–1 tan–1(–1)

S7. Ans. (b)

Sol.

sin–1x = y x = sin y

since –1 i.e.

cos y =

cos y = for 0

Now

cos(

–y = cos–1

y = –cos–1

S8. Ans. (b)

Sol.

cos

cos

=

= sin–1 =

S9. Ans. (b)

Sol.

sin–1x = , sin–1y = , sin–1 =

=

or =

cos(

cos

sin cos =

cos

we get = xy+z

squaring x2 + y2 + z2 + 2xyz = 1

S10. Ans. (a)

Sol.

= sin–1(sin 1–600)

= sin–1(–sin 240)

= sin–1 1–sin(180+60)

= sin–1 sin60 =

**Level-III**

Q1. cot–1 is

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q2. 2tan–1(cos x) = tan–1(cosec2x) then x is

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q3. If = tan–1 = tan–1b and ab = –1, then is

(a) 0

(b)

(c)

(d) none

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q4. co ........................

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q5. If sin–1x = for some x(–1, 1) then the value of cos–1x is

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q6. 2tan–1

(a) cos–1

(b) cos–1

(c) cos–1

(d) cos–1

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q7. tan

(a)

(b)

(c)

(d)

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q8. The equation sin–1x – cos–1x = cos–1 has

(a) no solution

(b) unique solution

(c) infinite number of solution

(d) none

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q9. The equation 2cos–1x + sin–1x = has

(a) no solution

(b) only one solution

(c) two solution

(d) three solution

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

Q10. If tan–1x + tan–1y + tan–1z = , then x+y+z is equal to

(a) xyz

(b) 0

(c) 1

(d) 2xyz

L5Difficulty5

Qtag Mathematics

Qcreator Pagemaker10

**Solutions**

S1. Ans. (d)

Sol.

cot–1

cot–1

cot–1

cot–1 cot =

S2. Ans. (d)

Sol.

2tan–1 cos x = tan–1 cosec2x

tan–1 = tan–1

=

x =

S3. Ans. (c)

Sol.

= tan–1and = tan–1b and ab = –1

tan tan = –1 tan = –cot

S4. Ans. (c)

Sol.

cot–1(2.1°) + cot–1(2.2°) .....................

= cot–1(2n2) = tan–1 = tan–1

=

= tan–1  – tan–1

S = tan–13 – tan–11 + tan–15 – tan–13 ..................

S = tan–1 – tan–11

S =

S5. Ans. (a)

Sol.

sin–1x + cos–1x =

cos–1x =

=

S6. Ans. (a)

Sol.

2tan–1 tan

cos–1

cos–1

cos–1  = cos–1

S7. Ans. (b)

Sol.

tan

Let co = co =

tan

= 2sec2 =

S8. Ans. (b)

Sol.

sin–1x – cos–1x =

sin–1x + cos–1x =

sin–1x = and cos–1x =

x = unique solution

S9. Ans. (a)

Sol.

cos–1x +

cos–1x

which is not possible as

cos–1x [0,

S10. Ans. (a)

Sol.

tan–1 =

x + y + z – xyz = 0

x + y + z = xyz